Smart Bathroom Safety System

Where help goes silent, our system speaks

Presented by Team Techlings

The Silent Crisis in Our Bathrooms

Bathroom accidents represent a critical and often overlooked safety challenge, particularly for elderly individuals and those with mobility concerns.

Every year, thousands of preventable injuries occur:

- Falls from slipping or fainting go undetected for crucial minutes
- Delayed emergency response leads to severe complications
- Family members and caregivers face constant worry
- Traditional call buttons require conscious action—often impossible during emergencies

The Cost of Delayed Response

80%
Fall-Related Injuries
occur in bathrooms among seniors living independently
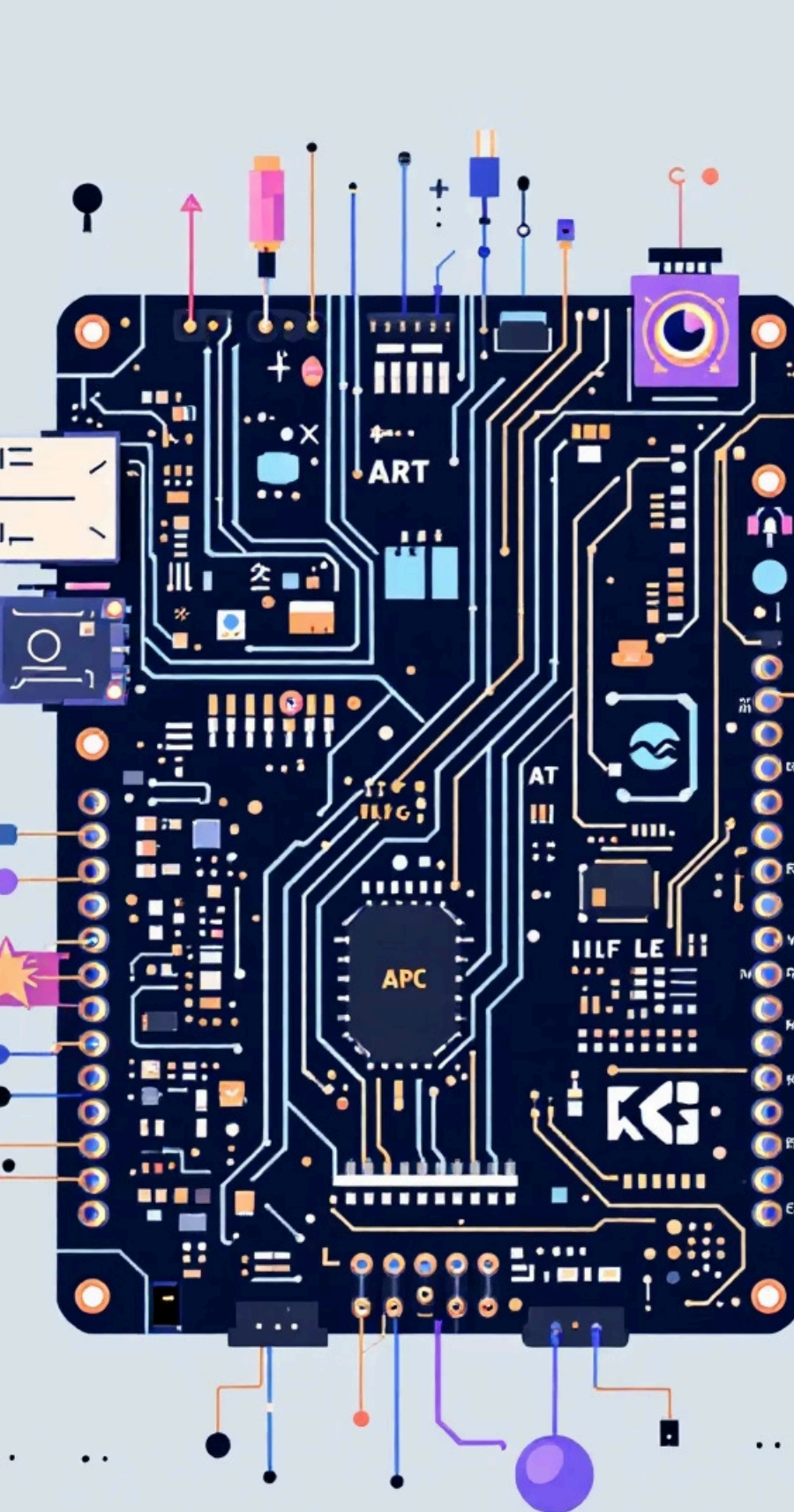
35%
Hospitalization Risk
increases when help is delayed beyond 10 minutes

24/7
Monitoring Need
required for at-risk individuals, straining caregivers

Current solutions rely on active user intervention—but what happens when someone can't press a button? We need smarter, more proactive technology.

Our Solution: Intelligent, Automatic Protection

The Smart Bathroom Safety System uses advanced sensor technology to detect emergencies automatically—no buttons, no apps, no user action required.

01

Continuous Monitoring

IR and ultrasonic sensors track movement patterns in real-time

02

Intelligent Detection

Arduino processor analyzes activity and identifies abnormal situations

03

Immediate Alert

System triggers local buzzer and sends remote notifications instantly

04

Help Arrives

Caregivers respond quickly, preventing serious complications
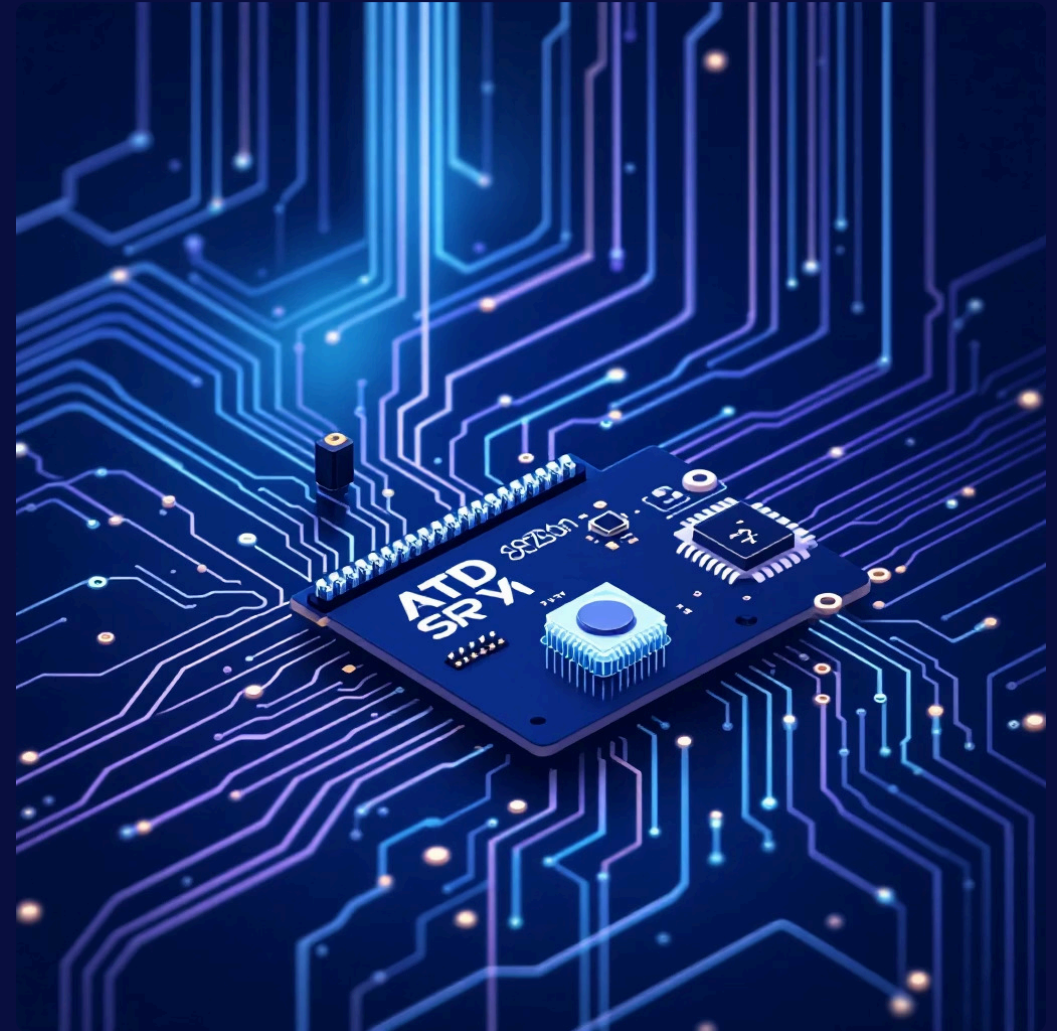
How It Works: Smart Detection in Action
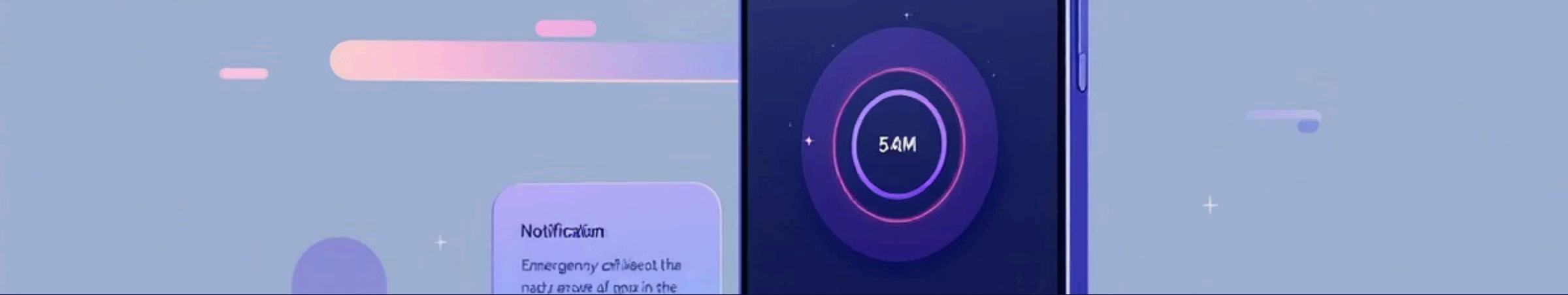
Detection Mechanism

Our dual-sensor approach ensures reliable monitoring:

- **IR Sensor:** Detects presence and basic movement patterns

- **Ultrasonic Sensor:** Measures distance and position changes

- **Arduino Brain:** Processes data streams and identifies emergencies

When movement stops unexpectedly or unusual patterns emerge, the system immediately activates its alert protocol.

The system learns normal bathroom usage patterns, reducing false alarms while maintaining vigilant protection.

Made with GAMMA

Advanced Alert System

Sensors Detect

Abnormal activity identified in real-time

Arduino Processes

Data analyzed against safety thresholds

Local Buzzer

Immediate audio alert activated on-site

Remote Notification

Caregiver receives instant mobile alert

Our optional IoT integration via Wi-Fi or GSM module ensures caregivers are notified wherever they are—providing peace of mind and rapid response capability.

Technology Stack

Sensing Layer

- IR Motion Sensor
- Ultrasonic Distance Sensor
- Environmental monitoring

Processing Core

- Arduino Uno/ESP8266
- Real-time data analysis
- Pattern recognition algorithms
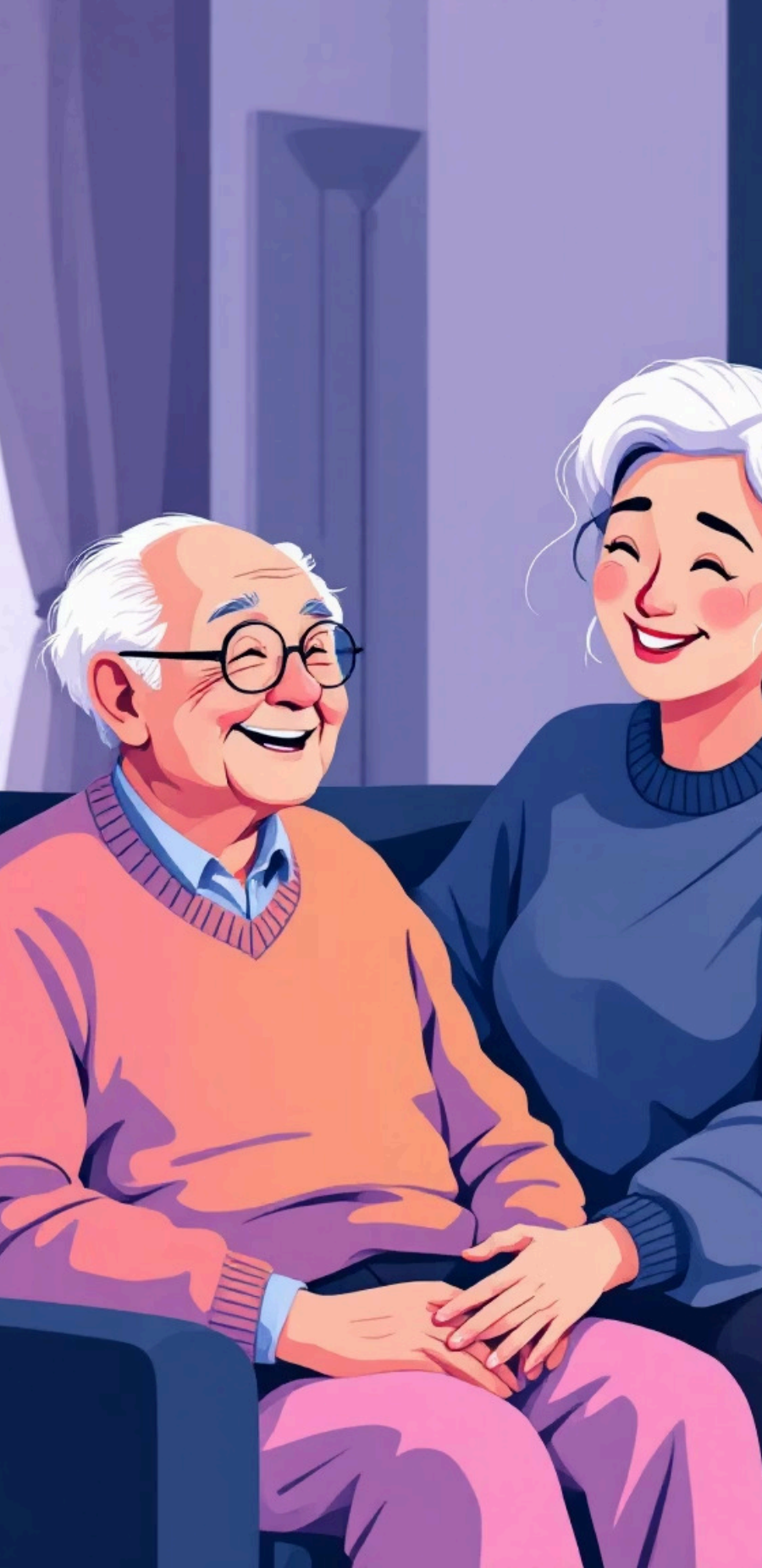
Alert Hardware

- High-decibel buzzer
- Status LED indicators
- Backup power system

Communication

- Wi-Fi/GSM module
- IoT platforms (Blynk)
- SMS/app notifications

Software Environment: Arduino IDE for embedded programming, ThingSpeak or Blynk for cloud integration and remote monitoring dashboards.

Real-World Impact & Benefits

Rapid Emergency Detection

Identifies accidents within seconds, dramatically reducing response time and preventing serious complications from delayed care.

Affordable & Accessible

Cost-effective solution using readily available components—making advanced safety technology accessible to more families and facilities.

Privacy-Centered Design

No cameras, no recording—just movement sensors that respect dignity while providing protection. Ideal for elderly care environments.

Scalable Architecture

Easily deployed across multiple bathrooms in healthcare facilities, assisted living communities, or private homes.

Who Benefits?

Elderly Individuals

Maintain independence with invisible protection. Live confidently knowing help will arrive automatically if needed.
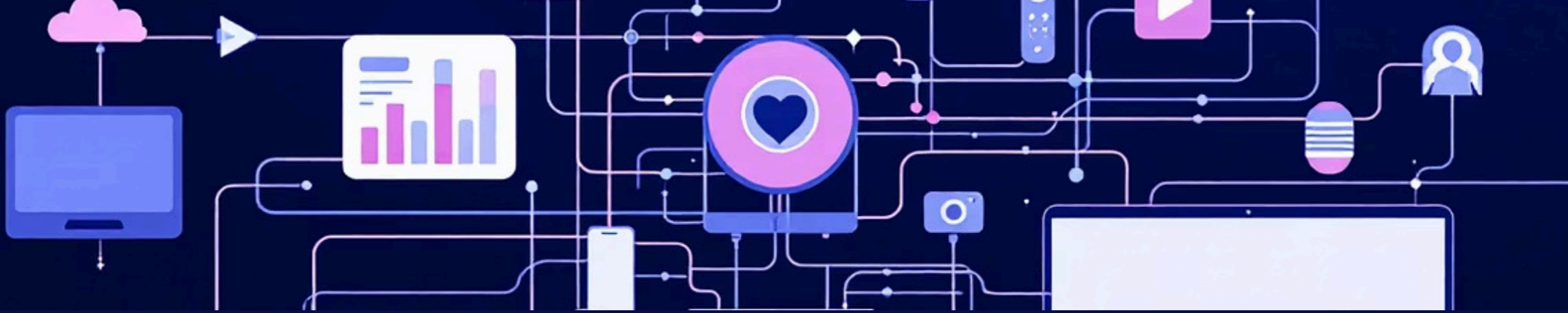
Family Caregivers

Receive instant alerts and peace of mind. Monitor loved ones remotely without invasive cameras or constant check-ins.

Healthcare Facilities

Enhance patient safety across multiple rooms. Reduce staff burden while improving response times and outcomes.

Universal Protection: Whether it's a family home or a 50-room care facility, our system adapts to protect those who need it most.

Join Us in Making Bathrooms Safer

Safety shouldn't wait

Proven Technology

Reliable sensor systems tested in real-world environments

Easy Implementation

Simple installation with minimal disruption to existing facilities

Measurable Results

Reduced emergency response times and improved safety outcomes

"In emergencies, every second counts. Our Smart Bathroom Safety System ensures those seconds are never wasted —delivering protection when it matters most."

Team Techlings | Ready to deploy and save lives